UNITED STATES PATENT AND TRADEMARK OFFICE

C/C

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,310	11/21/2003	Paul G. Brunetta	P1979R1	3292

9157 7590 11/08/2005

GENENTECH, INC.
1 DNA WAY
SOUTH SAN FRANCISCO, CA 94080

EXAMINER	
HUYNH, PHUONG N	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,310	BRUNETTA ET AL.	
	Examiner	Art Unit	
	Phuong Huynh	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *Three* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *14,20-28 and 33-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,15-19 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/21/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's Status Inquiry, filed 3/21/05 is acknowledged. This Office Action should serve in response to said inquiry.

2. Claims 1-46 are pending.

3. Applicant's election of Group 1, claims 1-13, 15-19 and 29-32, drawn to a method of treating a specific non-malignant disease or disorder, comprising administering to the mammal a therapeutic effective amount of an antibody or conjugated antibody which binds ErbB2 and further comprising administering a specific second therapeutic agent, wherein the non-malignant disease is psoriasis that read on the species of immunosuppressive agent and wherein the antibody is not conjugated with a cytotoxic agent, filed 9/23/05, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

4. Claims 14, 20-28, and 33-46 are withdrawn from further consideration by the examiner, 37 C.F.R. 1.142(b) as being drawn to non-elected inventions.

5. Claims 1-13, 15-19 and 29-32, drawn to a method of treating a specific non-malignant disease or disorder comprising administering to the mammal a therapeutic effective amount of an antibody or conjugated antibody which binds ErbB2 and further comprising administering a specific second therapeutic agent, wherein the non-malignant disease is psoriasis that read on species of immunosuppressive agent and wherein the antibody is not conjugated with a cytotoxic agent, are being acted upon in this Office Action.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-13, 15-19 and 29-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

It is apparent that the antibody 2C4 produced by hybridoma cell line deposited under ATCC Deposit No HB-12697 recited in claims 3, 9, and 31 are required to practice the claimed invention. As a required element, it must be known and readily available to the public or obtainable by a repeatable method set forth in the specification.

It is noted that said hybridoma has been deposited with the ATCC as disclosed on page 44 of the specification.

If the deposit has been made under the terms of the Budapest Treaty, an affidavit or declaration by applicants or someone associated with the patent owner who is in a position to make such assurances, or a statement by an attorney of record over his or her signature, stating that the hybridoma secreting said antibody has been deposited under the Budapest Treaty and that the hybridoma will be irrevocably and without restriction or condition released to the public upon the issuance of a patent would satisfy the deposit requirement made herein. See 37 CFR 1.808.

If the deposit has not been made under the Budapest Treaty, then an affidavit or declaration by applicants or someone associated with the patent owner who is in a position to make such assurances, or a statement by an attorney of record over his or her signature must be made, stating that the deposit has been made at an acceptable depository and that the criteria set forth in 37 CFR 1.801-1.809, have been met.

Further, the specification does not teach how to treat any and all "non-malignant disease" or "disorder" involving abnormal activation or production of any ErbB receptor or any ErbB ligand, any disorder involved in abnormal activation of EGFR such as overexpression of any and all ErbB ligand, any non-malignant disease such as psoriasis, endometriosis, scleroderma, any vascular disease, any colon polyps, any fibroadenoma, any respiratory disease in a mammal comprising administering to the mammal a therapeutic effective amount of any antibody which binds any ErbB2, any antibody that blocks ligand activation of any ErbB receptor, any monoclonal antibody to ErbB2 such as "2C4", any humanized 2C4 antibody alone or in combination with any immunosuppressive agent, any immunosuppressive agent such as any tyrosine kinase inhibitor, any IL-1 antagonist, any TNF antagonist, or any ErbB antagonist as set forth in claims 1-13, 15-19 and 29-32.

The term "non-malignant disease or disorder" as defined on pages 15-18 of the specification encompasses treatment of autoimmune diseases, endometriosis, scleroderma, restenosis, polyps, fibroadenoma, respiratory diseases, polycystic kidney disease, inflammatory diseases, skin disorders such as psoriasis, gastrointestinal disorder, pulmonary disease, vascular disorder, restenosis, hypertension, asthma, bronchitis, etc.

The specification teach various monoclonal antibodies that bind specifically to human ErbB2 such as 7C2, 7F3, 4D5, and 2C4 produced by hybridomas under the ATCC accession number ATCC HB-12215, ATCC HB-12216, ATCC CRL 10463 and ATCC HB-12697, respective (page 44). The specification discloses humanized antibodies and binding fragment thereof (see pages 45, 8-11 and page 48). The specification further teaches the antibody such as 2C4 inhibits the association of ErbB2 and ErbB3 in mammary tumor cell lines MCF7 and SK-BR3 (see page 47). The specification further discloses that binding of monoclonal antibody 2C4 to human erbB2 blocks EGF, TGFα or HRG mediated activation of MAPK kinase in MCF7 cancer cells (see page 51). The specification asserts that that any non-malignant disease, any disorder including psoriasis *may be treated* with anti-ErbB2 antibody alone or co-administration of adjunct therapy (see page 53, lines 6-24, in particular).

The specification fails to teach even one working example that provides treatment of one "non-malignant disease or disorder" by administering to a mammal any antibody that binds to ErbB2. There is no evidence of record that non-malignant disease or disorder such as psoriasis can be treated with any ErbB2 antibody. Unlike breast cancer cell lines, there is no evidence of record that ErbB2 are present in karatinocytes. Neither the specification nor the art teach that malignant breast cancer cell line such as MCF-7 and SK-BR3 are appropriate model for all non-malignant diseases or disorders, or non-malignant disorder such as psoriasis. The specification fails to teach an in vitro assay that is predictive of success in vivo of treating all "non-malignant disease or disorder". Therefore, one skilled in the art would have reason to doubt that any anti-erbB2 antibody administered in any manner would be able to treat all non-malignant diseases or disorders, any disorder such as psoriasis.

Sauder et al teach psoriasis is a chronic T cell mediated inflammatory skin disease that no cure for psoriasis has been found (see page 206, col. 2, in particular). Sauder further teach the traditional options for psoriasis involves in the use of both topical and systemic medications such as topical corticosteroid, coal tar, salicylic acid, vitamin D derivative, phototherapy, methotrexate, or cyclosporine (see page 207-208, in particular).

Mascia et al teach blocking EGF receptor led to a deranged chemokine expression in keratinocytes that lead to an *enhanced* skin inflammation rather than suppress inflammation (see entire document, abstract, in particular).

Giaccone et al teach predicting the future for patients using EGF receptor targeted agent is unpredictable to the outcome and further research is required before the optimal dosing strategy for HER1/EGFR tyrosine kinase inhibitor (see entire documents, abstract, in particular).

Puddicombe et al teach interaction of epidermal growth factor/transforming growth factor alpha chimera with human epidermal growth factor receptor reveals unexpected complexities and the properties of these ligand are not always predictable, as had been assumed previously (see abstract, page 30397, col. 1, last paragraph, in particular).

Further, there is insufficient guidance as how to make and use any "IL-1 antagonist", any "TNF antagonist", and any "ErbB antagonist" without the chemical structure or the amino acid sequence. It is known in the art that even a single amino acid change in a protein leads to unpredictable changes in the biological activity of the protein.

Ngo et al teach that the amino acid positions within the polypeptide/protein that can tolerate change such as conservative substitution or no substitution, addition or deletion which are critical to maintain the protein's structure/function will require guidance (See Ngo et al., 1994, The Protein Folding Problem and Tertiary Structure Prediction, pp. 492-495).

Mason et al teach in activin A, even a single amino acid substitution from cysteine to alanine fails to maintain either the structure and/or functions such as intracellular assembly and secretion of the dimer protein (see page 327, column 1, in particular) and loss biological activity (See activin cysteine mutant 4 and 12, page 327, column 2, in particular) and loss of receptor binding activity (See Receptor Binding Activities of activin cysteine mutant 4 and 12, page 327, column 2, in particular). Mason *et al* further teach an equivalent protein such as TGFβ1 in which replacing cysteine residue for a serine residue, the resulting secreted monomer polypeptide lacks bioactivity (See page 330, column 1, first paragraph, in particular).

Given the unlimited number of non-malignant disorders, the lack of guidance as to structure of any antagonist as well as the binding specificity of any ErbB2 and the lack of in vivo working example, it would require undue experimentation of one skilled in the art to practice the claimed invention. See page 1338, footnote 7 of Ex parte Aggarwal, 23 USPQ2d 1334 (PTO Bd. Pat App. & Inter. 1992).

8. Claims 1-13, 15-19 and 29-32 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The specification does not reasonably provide a **written description** of (1) the binding specificity of all antibodies that bind any erbB2 for the claimed method of treating any and all "non-malignant disease or disorder", any disorder such as psoriasis either alone or in combination with (2) any immunosuppressive agent, (3) any immunosuppressive agent such as IL-1 antagonist, (4) any TNF antagonist, (5) any ErbB antagonist, (6) which non-malignant disease or disorder involves abnormal activation of which EGF receptors, (7) which non-malignant disease or disorder involves abnormal production of which EGF receptors, (8) which non-malignant disease or disorder involves abnormal production of which ErbB ligand, and (9) which antibody blocks which ligand activation of which ErbB receptor in the treatment of psoriasis.

The specification teach various monoclonal antibodies that bind specifically to human ErbB2 such as 7C2, 7F3, 4D5, and 2C4 produced by hybridomas under the ATCC accession number ATCC HB-12215, ATCC HB-12216, ATCC CRL 10463 and ATCC HB-12697, respective (page 44). The specification discloses humanized antibodies and binding fragment thereof (see pages 45, 8-11 and page 48). The specification further teaches the antibody such as 2C4 inhibits the association of ErbB2 and ErbB3 in mammary tumor cell lines MCF7 and SK-BR3 (see page 47). The specification further discloses that binding of monoclonal antibody 2C4 to human erbB2 blocks EGF, TGFα or HRG mediated activation of MAPK kinase in MCF7 cancer cells (see page 51). The specification asserts that that any non-malignant disease, any disorder including psoriasis *may be treated* with anti-ErbB2 antibody alone or co-administration of adjunct therapy (see page 53, lines 6-24, in particular). The term "non-malignant disease or disorder" as defined on pages 15-18 of the specification encompasses treatment of autoimmune diseases, endometriosis, scleroderma, restenosis, polyps, fibroadenoma, respiratory diseases, polycystic kidney disease, inflammatory diseases, skin disorders such as psoriasis, gastrointestinal disorder, pulmonary disease, vascular disorder, restenosis, hypertension, asthma, bronchitis, etc.

The specification fails to describe which EGF receptor is over expressed in which non-malignant disease or disorder. The specification does not adequately describe the binding specificity of all ErbB2, much less which ErbB2 antibody blocks which ErbB receptor ligand

activation of which ErbB receptor in which non-malignant disease, or which non-malignant disease or disorder involves in abnormal activation of which EGFR, or which ErbB ligand.

With the exception of the specific deposited antibodies that bind to human ErbB2 and the specific IL-1 antagonist or TNF antagonist for inhibiting the association of ErbB2 and ErbB3 in mammary tumor cell lines MCF7 and SK-BR3 in vitro, there is insufficient written description about the method of treating all non-malignant disease. Further, there is inadequate written description about the binding specificity of all antibody. There is also lack of a written description disclosure about the structure associated with function of all IL-1 antagonist, TNF antagonist and ErbB antagonist for treating all non-malignant disease or disorder as broadly as claimed without the chemical structure or amino acid sequence.

The specification discloses only the specific deposited antibodies for inhibiting breast cancer cell proliferation in vitro, one of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species of antibody in combination with any IL-1 antagonist, any TNF alpha antagonist, any ErbB antagonist to treat all non-malignant disease or disorder such as psoriasis for the claimed method. Thus, Applicant was not in possession of the claimed genus. *See University of California v. Eli Lilly and Co. 43 USPQ2d 1398; University of Rochester v. G.D. Searle & Co., 69 USPQ2d 1886 (CA FC2004).*

Applicant is directed to the Final Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-8 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/15730 publication (March 8, 2001; PTO 1449).

The WO 01/15730 publication teaches a method of treating non-malignant disease or disorder involving abnormal activation or production of ErbB receptor such as benign hyperproliferative epithelial, inflammatory angiogenic immunological disorders (see page 14, lines 9-14, page 30, lines 31-38, in particular) by administering to a mammal such as human (see

abstract, in particular) an effective amount of an antibody which binds ErbB2 such as humanized version of 4D5 also known as HERCEPTIN®, 7C2, 7F3, 4D5, 2C4 (see page 33, in particular). The reference monoclonal antibody 2C4 inherently blocks ligand activation of the human ErbB receptor or EGFR. The WO 01/15730 publication further teaches the humanized form of 2C4 (see page 5, lines 34, in particular) and antibody fragment thereof such as Fab or Fv (see page 11, lines 26-37, page 12-13, in particular). The reference antibody is not conjugated to with a cytotoxic agent (see page 33, claim 1 of WO 01/15730 publication, in particular). The reference method wherein the antibody is administered at least one dose to the patient in an about from 4mg/kg not exceeding 30mg/kg, which is within the claimed limitation of about 0.5mg/kg to about 30 mg/kg. The reference hyperproliferative epithelial disease inherently involves in abnormal activation of EGFR, overexpression of ErbB ligand such as TGF-alpha. Thus, the reference teachings anticipate the claimed invention.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103(a) that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. This application currently names joint inventors. In considering Patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1, 19 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/15730 publication (March 8, 2001; PTO 1449) in view of WO 98/02540 (January 22, 1998; PTO 1449).

The teachings of the WO 01/15730 publication have been discussed supra.

The claimed invention differs from the teachings of the reference only in that the method wherein the disease is psoriasis.

The WO 98/02540 publication teaches a method of treating psoriasis by administering to the mammal with various heteromultimeric adhesions ErbG-Ig comprising the extracellular domain of ErbB2-IgG (see page 35, line 11, homodimer, abstract, in particular). The WO 98/02540 publication teaches blocking ErbB2 using ErbB antagonist such as ErbB2 and ErbB3 or ErbB2 and ErbB4 fused to Fc prevents the ErbB ligand from binding and activation of the ErbB receptor (see page 25, lines 1-10, page 23, lines 23-31, heterodimer, abstract, claims 37-40, in particular).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the heteromultimeric adhesions ErbG-Ig for treating psoriasis as taught by WO 98/02540 publication for the antibody that binds ErbB2 such as 2C4 or humanized 2C4 that blocks ligand activation of the ErbB4 receptor as taught by the WO 01/15730 publication. From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

One having ordinary skill in the art would have been motivated to do this because antibody which binds ErbB2 is useful for treating non-malignant disease or disorder involving abnormal activation or production of ErbB receptor such as benign hyperproliferative epithelial, inflammatory angiogenic immunological disorders as taught by the WO 01/15730 publication (see page 14, lines 9-14, page 30, lines 31-38, in particular). The WO 98/02540 publication teaches blocking ErbB2 ligand from binding and activating the ErbB receptor is useful for treating psoriasis (see page 25, line 8, homodimer, abstract, in particular).

14. Claims 15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/15730 publication (March 8, 2001; PTO 1449) in view of WO 98/02540 (January 22, 1998; PTO 1449) as applied to claims 1, 19, and 29-31 mentioned above and further in view of Feldman et al (Dermatol Online J 6(1): 4, September 2000; PTO 892).

The combined teachings of the WO 01/15730 publication and the WO 98/02540 publication have been discussed supra.

The invention in claim 15 differs from the combined teachings of the references only in that the method of treating non-malignant disease or disorder further comprises administering to

the human a therapeutically effective amount of a second therapeutic agent, or immunosuppressive agent.

The invention in claim 21 differs from the combined teachings of the references only in that the method of treating psoriasis further comprises administering to the human a therapeutically effective amount of a second therapeutic agent, or immunosuppressive agent.

Feldman et al teach a method of treating non-malignant disorder such as psoriasis that involved inflammation, hyperproliferation of keratinocyte by administering to the patient various immunosuppressive agent or a combination of such agents such as corticosteroid, cyclosporine, retinoid, psoralens, coal tar, and phototherapy such as UVB, methotrexate (see entire document, abstract, summary, in particular). Feldman et al teach a combination of modalities can be utilized to enhance the therapeutic effect and minimize the adverse effects that could result from excessive use of one agent (see Treatment goal, in particular).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the immunosuppressive agent known to be useful for treating psoriasis as taught by Feldman et al with the antibody that binds ErbB2 as taught by the WO 01/15730 publication by blocking ErbB ligand activation of the ErbB receptor for treating psoriasis as taught by the WO 98/02540 publication. From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

One having ordinary skill in the art would have been motivated to do this because various immunosuppressive agents have been used to treat psoriasis and a combination of modalities can be utilized to enhance the therapeutic effect and minimize the adverse effects that could result from excessive use of one agent as taught by Feldman et al (see Treatment goal, in particular). The WO 98/02540 publication teaches blocking ErbB2 ligand from binding and activating the ErbB receptor is useful for treating psoriasis (see page 25, line 8, homodimer, abstract, in particular). Antibody which binds specifically to ErbB2 is useful for treating non-malignant disease or disorder involving abnormal activation or production of ErbB receptor such as benign hyperproliferative epithelial, inflammatory and angiogenic immunological disorders as taught by the WO 01/15730 publication (see page 14, lines 9-14, page 30, lines 31-38, in particular).

15. No claim is allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Huynh "NEON" whose telephone number is (571) 272-0846. The examiner can normally be reached Monday through Friday from 9:00 am to 5:30 p.m. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The IFW official Fax number is (571) 273-8300.

17. Any information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phuong N. Huynh, Ph.D.
Patent Examiner
Technology Center 1600
October 28, 2005

Christina Chan
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600